

U.S. Application No.
Unknown

International Application No.
PCT/DE98/01320

Attorney Docket No.
RIEB6.001APC

09/424006 Page 1

Date: November 15, 1999

**TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 USC 371**

International Application No.: PCT/DE98/01320
International Filing Date: May 13, 1998
Priority Date Claimed: May 14, 1997
Title of Invention: METHOD FOR SUBSCRIBER AVAILABILITY IN A RADIO
COMMUNICATIONS SYSTEM
Applicant(s) for DO/EO/US: Georg Sanger

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. (X) This is a **FIRST** submission of items concerning a filing under 35 USC 371.
2. () This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 USC 371.
3. (X) This express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).
4. (X) A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. (X) A copy of the International Application as filed (35 USC 371(c)(2))
 - a) () is transmitted herewith (required only if not transmitted by the International Bureau).
 - b) (X) has been transmitted by the International Bureau.
 - c) () is not required, as the application was filed in the United States Receiving Office (RO/US).
6. (X) A translation of the International Application into English (35 USC 371(c)(2)).
7. (X) Amendments to the claims of the International Application under PCT Article 19 (35 USC 371(c)(3))
 - a) () are transmitted herewith (required only if not transmitted by the International Bureau).
 - b) () have been transmitted by the International Bureau.
 - c) () have not been made; however, the time limit for making such amendments has NOT expired.
 - d) (X) have not been made and will not be made.
8. () A translation of the amendments to the claims under PCT Article 19 (35 USC 371(c)(3)).
9. () An oath or declaration of the inventor(s) (35 USC 371(c)(4)).
10. (X) A copy of the International Preliminary Examination Report with any annexes thereto, such as any amendments made under PCT Article 34.
11. (X) A translation of the annexes, such as any amendments made under PCT Article 34, to the International Preliminary Examination Report under PCT Article 36 (35 USC 371(c)(5)).

Date: November 15, 1999

420 Rec'd PCT/PTO 15 NOV 1999

Page 2

Items 11. to 16. below concern other document(s) or information included:

12. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
13. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
14. ☒ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or address letter.
17. ☒ International Application as published (cover sheet only).
18. ☐ Small Entity Statement.
19. ☐ PCT Form PCT/IPEA/402.
20. ☒ PCT Form PCT/IB/308.
21. ☐ PCT request form.
22. ☒ A return prepaid postcard.
23. ☒ The following fees are submitted:

RECEIVED

U.S. Application No.
Unknown

International Application No.
PCT/DE98/01320

09/424006
Attorney Docket No.
RIEB6.001APC

Date: November 15, 1999

420 Rec'd PCT/PTO 15 NOV 1999 Page 3

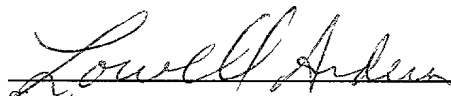
				FEES
BASIC FEE				\$840
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total Claims	5 - 20 =	0 ×	\$18	\$0
Independent Claims	1 - 3 =	0 ×	\$78	\$0
Multiple dependent claims(s) (if applicable)			\$260	\$0
TOTAL OF ABOVE CALCULATIONS				\$840
Reduction by 1/2 for filing by small entity (if applicable). Verified Small Entity statement must also be filed. (NOTE 37 CFR 1.9, 1.27, 1.28)				\$0
TOTAL NATIONAL FEE				\$840
TOTAL FEES ENCLOSED				\$840
amount to be refunded:				\$0
amount to be charged:				\$0

24. (X) The fee for later submission of the signed oath or declaration set forth in 37 CFR 1.492(e) will be paid upon submission of the declaration.
25. (X) A check in the amount of \$840 to cover the above fees is enclosed.
26. () Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40 per property.
27. (X) The Commissioner is hereby authorized to charge only those additional fees which may be required to avoid abandonment of the application, or credit any overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

KNOBBE, MARTENS, OLSON & BEAR, LLP
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660


Signature

Lowell Anderson
Printed Name

30,990
Registration Number

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Georg Sanger)	Group Art Unit Unknown
)	
Appl. No.	:	Unknown)	
)	
Filed	:	Herewith)	
)	
For	:	METHOD FOR SUBSCRIBER)	
		AVAILABILITY IN A RADIO)	
		COMMUNICATIONS)	
		SYSTEM)	
)	
Examiner	:	Unknown)	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Prior to examination of the above-captioned application, please amend the translation of the originally filed PCT application as follows:

IN THE SPECIFICATION:

On page 1, line 5, please delete "Description."

On page 1, immediately before line 6, please insert --Field of the Invention--.

On page 1, immediately before line 8, please insert --Background of the Invention--.

On page 1, immediately before line 23, please insert --Summary of the Invention--.

On page 1, line 27, please replace "This objective is attained with the characteristics of Claim 1" with --One aspect of the invention involves a method for reaching subscribers in a radio communications system. Object identifications are temporarily assigned to subscribers wherein the temporary object identifications are formed by subscriber data sets that respectively define an

Appl. No. : **Unknown**
Filed : **Herewith**

entire subscriber environment of a virtual communication network (VPN) within the radio communications system. One or more subscriber data sets are assignable to subscribers of the radio communication system. Predetermined subscriber environments are selectively allocated to respective authorized subscribers, wherein the predetermined subscriber environments are defined by the subscriber data sets.--

On page 2, immediately before line 28, please insert --Brief Description of the Drawings--.

On page 2, line 29, please add --The drawings include the following figures:

Figure 1 shows an illustration of a radio communications system.

Figure 2 shows an illustration of a virtual private network.--

On page 2, immediately before line 30, please insert --Detailed Description of the Invention--.

On page 2, immediately before line 30, please insert --Figure 1 shows an illustration of a radio communications system which has a functionality of an intelligent network (IN). A virtual private network (VPN) is part of the radio communications system.

Figure 2 shows an illustration of the virtual private network which is part of the radio communications system shown in Figure 1. Several subscribers of the radio communications system are "members" or subscribers (SC) of the virtual private network. In Figure 2 three subscribers SC1, SC2, SC3 are shown. A number of subscriber environments (subscriptions) in form of subscriber data records (or sets) SDR1, SDR2, ... SDR8 are reserved for the subscribers of the virtual private network. The subscriber data records can be freely assigned to any of the subscribers of the virtual private network. In Figure 2, the subscriber data record SDR1 is assigned to the subscriber SC2, the subscriber data record SDR3 is assigned to the subscriber SC1, and the subscriber data record SDR5 is assigned to the subscriber SC3.--

Appl. No. : **Unknown**
Filed : **Herewith**

On page 3, line 1, after "SIM card," please insert --(Subscriber Identity Module)--.

On page 3, line 9, after "MSISDN," please insert --(Mobile Station International ISDN Number (ISDN: Integrated Services Digital Network))--.

On page 3, line 29, after "IMSI," please insert --(International Mobile Subscriber Identity)--

On page 6, line 11, after "IN," please insert --(Intelligent Network)--.

On page 7, line 6, after "CLIP," please insert --(Calling Line Identification Presentation)--.

On page 8, line 1, please replace "CLAIMS" with --WHAT IS CLAIMED IS:--

IN THE CLAIMS:

Please cancel Claims 1 - 4 without prejudice. Claim 5 will be canceled in response to the first Office Action.

Please add new Claims 6 - 10 as follows:

6. A method for reaching subscribers in a radio communications system, comprising:

temporarily assigning object identifications to subscribers, said temporary object identifications being formed by subscriber data sets that respectively define an entire subscriber environment of a virtual communication network within the radio communications system, wherein one or more subscriber data sets are assignable to subscribers of the radio communication system; and

selectively allocating predetermined subscriber environments to respective authorized subscribers, the predetermined subscriber environments being defined by the subscriber data sets.

7. The method according to Claim 6, further comprising administering calls regarding subscriber data sets of the virtual communication network through an intelligent network.

Appl. No. : Unknown
Filed : Herewith

8. The method according to Claim 6, further comprising carrying out an authorization check of the subscribers, and allocating the subscriber data sets after a positive result of the authorization check is obtained.

9. The method according to Claim 6, further comprising assigning a temporary, object-related and a permanent, individual subscriber environment to a subscriber, to whom an object identification has been assigned.

10. The method according to Claim 9, further comprising reaching the subscriber always under the call numbers which correspond to the individual and the temporary subscriber environments currently assigned to the subscriber.

REMARKS

The foregoing amendments are to more closely conform the application to U.S. practice. Figures 1 and 2 have been added to illustrate the claimed features. Support for Figures 1 and 2 can be found, for example, on page 1, line 28, to page 2, line 13. No new matter is added. Entry of the amendments is respectfully requested.

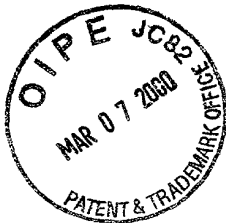
Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 11/15/99

By: Lowell Anderson

Lowell Anderson
Registration No. 30,990
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(949) 760-0404



Applicant or Patentee: Georg Snger

Application or Patent No.: 09/424,006

Filed or Issued: November 15, 1999

For: METHOD FOR SUBSCRIBER AVAILABILITY IN A RADIO COMMUNICATIONS SYSTEM

Attorney's Docket No.: RIEB6.001APC

Page 1

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL-ENTITY STATUS

1. I, the undersigned, do hereby declare that:

- a. ☐ I am an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office with regard to the invention described in the patent or application identified above; OR
- b. ☐ While I am not an inventor, I declare that rights under contract or law have been conveyed to and remain with me with regard to the invention described in the patent or application identified above. I would qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying fees to the United States Patent and Trademark Office if I had made the invention; OR
- c. ☐ I am the owner of the small business concern identified below OR
☒ I am an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS: DeTeMobil Deutsche Telekom MobilNet GmbH

ADDRESS OF SMALL BUSINESS: Landgrabenweg 151, 53227 Bonn, Germany

If either of the boxes in item (c) is checked, I further declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.1301 through 121.1305, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both. I further declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in the patent or application identified above; OR

- d. ☐ I am an official empowered to act on behalf of the nonprofit organization identified below:

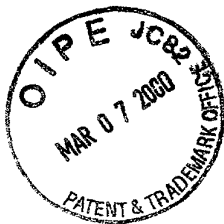
NAME OF NONPROFIT ORGANIZATION:

ADDRESS OF NONPROFIT ORGANIZATION:

TYPE OF NONPROFIT ORGANIZATION:

- ☐ university or other institution of higher education; OR
- ☐ tax exempt under Internal Revenue Service Code (26 USC 501(a) and 501(c)(3)); OR
- ☐ nonprofit scientific or educational organization qualified under a nonprofit organization statute under a statute of a state of the United States of America
(name of state: _____)
(citation of statute: _____); OR
- ☐ would qualify as tax exempt under Internal Revenue Service Code (26 USC 501(a) and 501(c)(3)) if located in the United States of America; OR
- ☐ would qualify as nonprofit scientific or educational organization qualified under a nonprofit organization statute under a statute of a state of the United States of America if located in the United States of America
(name of state: _____)
(citation of statute: _____)

If Box (d) is checked, I further declare that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.9(e) for purposes of paying reduced fees to the United States Patent and Trademark Office regarding the invention described in the patent or application identified above.



Applicant or Patentee: Georg Snger
Application or Patent No.: 09/424,006
Filed or Issued: November 15, 1999
For: METHOD FOR SUBSCRIBER AVAILABILITY IN A RADIO COMMUNICATIONS SYSTEM

Attorney's Docket No.: RIEB6.001APC
Page 2

2. The individual, concern or organization identified above has not assigned, granted, conveyed or licensed, and is under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).
3. If the rights held by the above-identified individual, concern or organization are not exclusive, each individual, concern or organization having rights in the invention are identified below. Each such individual, concern or organization must file separate verified statements averring to their status as small entities.

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

FULL NAME: _____
ADDRESS: _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME: _____
ADDRESS: _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

4. I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small-entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: Holger Kranzusch (1) Stefan Pilar (2)
TITLE OF PERSON (if not an owner or individual): Member of the Board of Management (1)
~~ADDRESS OF PERSON SIGNING~~ General Counsel (2)

SIGNATURE: [Signature] DATE: 1.2.00

420 Rec'd PCT/PTO 1.5 NOV 1999 PATENT
METHOD FOR SUBSCRIBER AVAILABILITY IN A
RADIO COMMUNICATIONS SYSTEM

5 Description

The present invention pertains to a method for subscriber availability in a radio communications system.

If certain subscribers of a radio communication system act as service providers and fulfill certain services for other subscribers of the communication system who act as service users, it is desirable for the other subscribers to reach the service providers at service call numbers that are not changed and known to the service users. These call numbers are ideally based on the type of service offered and, for example, may have a hierarchical structure or group allocations if the services of the different service providers are also divided into such groups.

The state of the art includes document EP 0,431,453. This document describes the allocation of such hierarchical or group-related object designations to service providers in the form of call numbers. In this case, a service call number is, if so requested, temporarily assigned to a service provider with an individual call number with the temporary service call number being adapted to the type of service provided by the service provider. The composition of the assigned call number makes it possible to directly conclude the activity currently being carried out.

However, it is disadvantageous that a new allocation of call numbers to the respective subscriber environment is required for the subscriber who acts as the service provider. This requires complicated steps in the communication with the subscriber.

Consequently, the present invention is based on the objective of developing a method which ensures that subscribers acting as service providers can be easily reached. This objective is attained with the characteristics of Claim 1.

Virtual communication networks (Virtual Private Network, VPN) are sufficiently known from the state of the art. These networks simulate a separate communication network that is actually situated within a real communication network. Utilization of this technology makes it possible to provide service identities in the form

of subscriber environments in this virtual communication network with the corresponding subscriber data sets. If a subscriber who acts as a service provider requires a temporary object identification, it suffices to allocate the already predetermined subscriber environment with its data sets to the service provider. A reorganization of the service provider's own subscriber environment, e.g., by allocating one or more new call numbers, consequently is no longer necessary. In this case, an authorization check of the subscribers should be carried out, and an allocation of the subscriber data sets should only take place after a positive result of the check has been obtained to ensure that the subscriber environments that may have specific privileges can only be utilized by authorized persons. In this respect, automatic methods, e.g., for recognizing the individual subscriber identification of the concerned subscriber, or procedures to be carried out by the subscriber, e.g., the input of passwords, may be utilized.

The administration of calls to the subscriber data sets of the virtual communication network, i.e., in particular, the connection and forwarding of incoming and outgoing calls, is ideally realized with the functions of an intelligent network.

A subscriber to whom an object identification was assigned preferably also has a temporary, object-related and a permanent, individual subscriber environment. This means that this subscriber can be reached as a virtual communication network subscriber as well as under his individual subscriber number. Consequently, it is ensured that the subscriber can be optimally reached. If a call to a subscriber environment arrives while said subscriber is carrying on a conversation in another environment, the second call may, for example, be rerouted to a voice memory or relayed to the subscriber during the call, i.e., the subscriber may alternately speak with both subscribers. This means that the subscribers can always be reached using the call numbers that correspond to the individual and the temporary subscriber environments actually assigned to the subscriber.

One special embodiment of the invention is described in greater detail below with an example of a mobile communications system using the GSM standard.

In GSM mobile radio networks, a subscriber can be reached respectively under the call number that was assigned to the subscriber and his subscriber environment, if

the subscriber has placed the SIM card assigned to the subscriber and the corresponding call number into an active GSM device ("subscriber mobility").

The invention provides the option of a "server mobility," i.e., a service-related availability. The term "server mobility" refers to instances, in which a "service user" is able to reach a "service provider" under a "service number" and under certain marginal conditions defined below.

One possible application of the invention is, for example, the utilization by train crews of railway companies. The train crew acts as the service provider. Each service provider has a GSM subscriber environment with a GSM call number MSISDN which is individually assigned to each service provider by means of a SIM chip card. The service users are not familiar with these call numbers. Each member of the train crew consequently has a GSM SIM card that is personally allocated to a respective member of the train crew or a service pool. In this case, the service users are subscribers of fixed networks or mobile subscribers.

Service numbers are call numbers that can be dialed and are valid within a VPN. They are parametrized, i.e., they can be divided into blocks of numbers that respectively have a certain meaning for the user. Generally speaking, there exist many combinations of numbers that a user may utilize as service numbers, e.g., more than a thousand number combinations. The respective service numbers consist, for example, of

- a function identification (train engineer, train conductor, cleaning personnel, train loudspeaker, ...) and
- a train number (5-digit).

The train crew can be reached under the service number that also contains the train number as long as the train crew accompanies the train. If personnel changes are made, the new personnel can be reached under the same numbers as before. These changes may take place spontaneously, namely at any time and at any location. The service users merely know the service numbers.

The service provider requests the allocation of the service number, i.e., to his GSM addresses IMSI, MSISDN, via his end device. The request may be made at any time and at any location. The service provider may determine the service number as part of the request, but the service number may also be predetermined.

At any given time no more than one service provider can usually be reached under a service number. However, group call numbers may also be provided. A service number may also remain unassigned. A service number is only actually allocated to a service provider once any prior allocation of this service provider can preferably only be
5 deleted by the service provider himself or by a network component with special authorization.

A parameter "unassigned" or "assigned" needs to be allocated to each service number. Once a service number is allocated to a service provider, the service number is "assigned;" otherwise, the service number is "unassigned." A request for a service
10 number is only granted if the service number is "unassigned."

Due to this measure, an unauthorized transfer of an allocation is prevented. In addition, it is possible to prevent an allocation from being impermissibly preserved. The invention proposes the method described below in order to prevent with a high probability an impermissible transfer as well as the impermissible blocking of a service
15 number.

The service provider who requests an allocation needs to have a corresponding authorization. The corresponding procedures are described below. The service provider requests the allocation of a "service number to his SIM:MSISDN" by means of a suitable input to his end device. In order to reduce the probability of an erroneous input,
20 he may be requested to input the number twice similar to the change of a PIN.

The system carries out the requested new allocation if the service number is "unassigned" at the time the request is made and acknowledges an allocation that was carried out. The actual service number is preferably displayed on the end device for the duration of the allocation.

25 The allocation of service numbers to service providers may be triggered by the respective service providers by means of an input to his end device. It may also be practical for an explicit logging off or switching off of the end device to also delete the allocation.

A second, new service provider who wants to take over the service number from
30 an (old) service provider may obtain the release of the assigned service number by

dialing the service number and (verbally) requesting the old service provider to delete the allocation.

The intervention by a third party is necessary in instances in which a service number is not released as requested and the (decentralized) request for a release of this service number is not granted. This intervention needs to be requested by the new service provider. However, it may also be automatically initiated as soon as an attempt to allocate a service number fails, e.g., in the form of a network check regarding the existing allocation and, if so required, its deletion. This "third party" is referred to as the "clearing station" in the following description.

Clearing stations may be provided in the form of corresponding devices of the communication network, but also in the form of fixed network or GSM subscribers. They may or may not have the function of a service provider. Clearing stations are characterized by the fact that they participate in the deletion of existing allocations of service providers to service numbers without having the service number reallocated to themselves. The authorizations required for this are described below. One differentiates, in principle, between two concepts:

— Clearing stations are able to delete any allocation of service numbers to service providers individually and spontaneously, i.e., without a request by a service provider. Clearing stations in this form are preferably arranged centrally and in small numbers. The block service provider can establish a connection with the clearing station via his end device.

— A clearing station is only able to delete an allocation in cooperation with the blocked service provider. The system deletes an allocation of a service number to a service provider if, for example, two service providers request the deletion independently of one another. The system needs to recognize the correlation between two deletion requests and monitor the time at which the requests arrive. If so required, the system may be assisted in such a way that the two service providers refer to one another in their requests by inputting an identity assigned to the other service provider which is known to the system as the password or part of the password. This identity may, for example, consist of part of the GSM:MSISDN of the respectively cooperating partner.

Clearing stations in this form are preferably decentralized and provided in large numbers. In this case, each service provider may represent a clearing station for another blocked service provider. The blocked service provider and the clearing station are usually situated at the same location.

5 The selection of one of these alternatives depends on other economical and operational conditions to be fulfilled. In the described example, the incorporation of one additional railway station clerk in the train number allocation as a "clearing station" may suffice for achieving a sufficient service quality.

10 A service number covers one complete subscriber environment, i.e., a service number acts like one individual GSM subscriber who receives no GSM:SIM card, but has access to all subscription characteristics of a GSM subscriber or IN subscriber.

15 This means that the service provider is a GSM subscriber and the service number is a virtual VPN subscriber, i.e., this pertains to two independent and basically different subscriber conditions. Consequently, "server mobility" in this context means that a public subscriber may temporarily become a subscriber in a VPN on his own initiative, namely in the ideal form of "as well as." Alternatively, the variation "either or" would also be conceivable, i.e., the subscriber would have to decide whether he would like to act as an individual subscriber or as a subscriber of the VPN.

20 For example, each member of the train crew respectively receives a personal end device with an individual SIM card. This provides the advantage that those personnel are motivated to monitor the devices and log on to the corresponding VPN with the required authorizations when necessary.

25 The allocation as well as the deletion of allocations of service numbers to service providers identified by GSM:MSISDN takes place only after the positive result of an authorization check carried out by the system is obtained. Various types of authorizations may be utilized:

Service Provider Authorization Via Subscription:

30 The service numbers that the service providers may respectively accept and convey possibly in the form of blocks are assigned to the individual GSM subscription data sets of the service providers. When so requested, the check takes place in the standard GSM network, with the corresponding function of the end device.

Service Number Authorization Via Devices:

The GSM:MSISDN which are authorized to respectively accept and convey the service numbers are assigned to the service numbers. The authorization check preferably takes place by determining or displaying subscriber identification data, e.g., the call number of the called service provider who requests a service number. For this purpose, the CLIP function is provided in GSM. In this case, the call number can be compared with a list of the authorized call numbers of service providers.

Password Authorization (As Service Number Authorization):

A password or several passwords for various functions to be handled differently that provide functions for all service numbers or certain service number groups are set up. This means that the password is allocated to one or more service numbers. These passwords are only disclosed to persons who are authorized to use these functions.

Password Authorization (As Service Provider Authorization):

In this case, identities of individual passwords are assigned to the individual GSM:MSISDN. The passwords are disclosed to persons who actually utilize the SIM:MSISDN. Corresponding actions are only permitted after the transmission of this individual SIM:MSISDN password and after a positive correlation with subscriber identification data (in GSM:CLIP data; see above).

Passwords may consist of a "secret" and a "public" portion. These methods can be utilized alternatively or in combination depending on the safety requirements and the operational practicability. A request for an allocation and a request for deleting an allocation are considered as two actions that require different authorizations.

A group is preferably formed under the service numbers such that, if a service provider assigned to a service number cannot be reached, is busy, or does not answer, the caller is rerouted to another service number of the same group by using predetermined selection criteria.

CLAIMS:

1. Method for reaching subscribers in a radio communication system in which an object identification is temporarily assigned to the subscribers, characterized by the fact that the temporary object identifications are formed by subscriber data sets that respectively define an entire subscriber environment of a virtual communication network VPN within the radio communication system, and by the fact that one or more such subscriber data sets may be assigned to subscribers of the communication system.

2. Method according to Claim 1, characterized by the fact that the administration of calls regarding subscriber data sets of the virtual communication network is realized by means of an intelligent network.

3. Method according to one of the previous claims, characterized by the fact that an authorization check of the subscribers is carried out, and by the fact that an allocation of the subscriber data sets takes place after a positive result of the check is obtained.

4. Method according to one of the previous claims, characterized by the fact that a subscriber, to whom an object identification was assigned, also has a temporary, object-related and a permanent, individual subscriber environment.

5. Method according to Claim 4, characterized by the fact that the subscriber can always be reached under the call numbers which correspond to the individual and the temporary subscriber environments currently assigned to the subscriber.

METHOD FOR SUBSCRIBER AVAILABILITY IN A RADIO COMMUNICATIONS SYSTEM

Abstract of the Disclosure

5 The invention pertains to a method for reaching subscribers in a radio
communication system in which an object identification is temporarily assigned to the
subscribers. The temporary object identifications are formed by subscriber data sets that
respectively define a complete subscriber environment of a virtual communication
network VP within the radio communication system, wherein one or more of such
10 subscriber data sets can be assigned to subscribers of the communication system.

H:\DOCS\MOH\MOH-2072.DOC:cc
111299

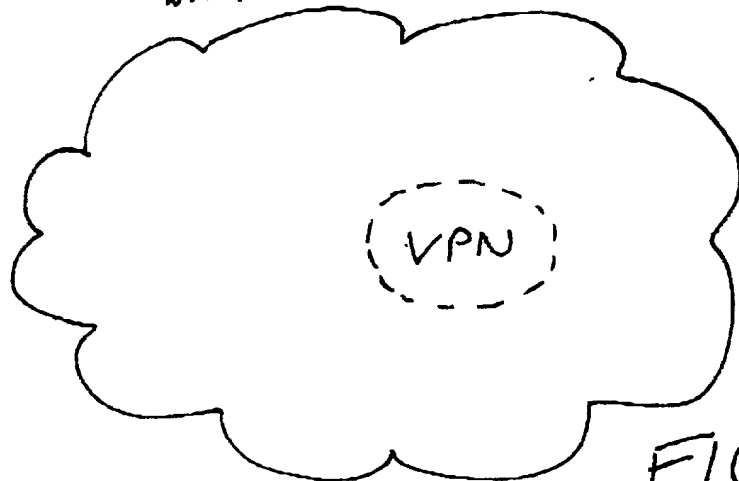
RADIO COMMUNICATION SYSTEM
WITH IN FUNCTIONALITY

FIG. 1

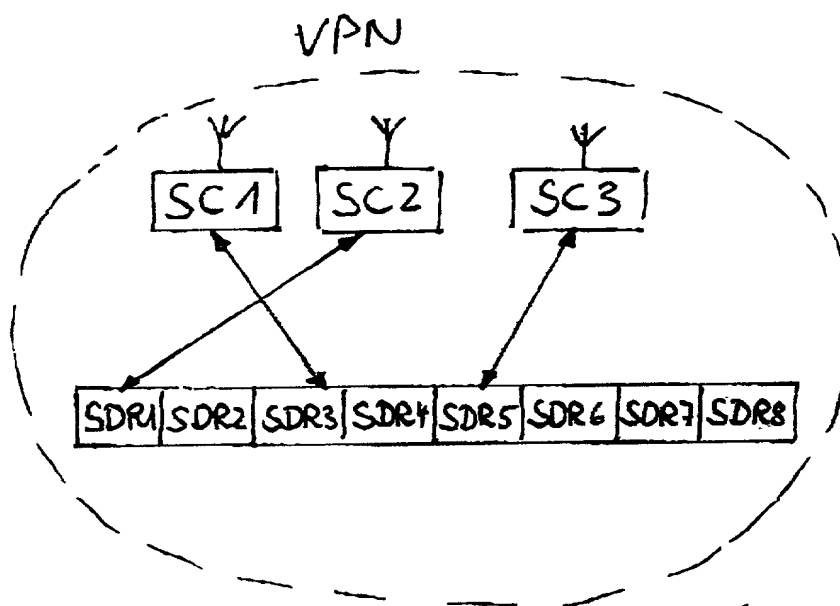


FIG. 2



DECLARATION - USA PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled METHOD FOR SUBSCRIBER AVAILABILITY IN A RADIO COMMUNICATIONS SYSTEM the specification of which:

- (a) ☐ is attached hereto; or
- (b) ☒ was filed on November 15, 1999 as Application No. 09/424,006 or
- (c) ☒ was described and claimed in PCT International Application No. PCT/DE98/01320 filed on May 13, 1998 and as amended under PCT Article 19 on _____ (if any) and/or under PCT Article 34 on May 11, 1999 (if any).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above;

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56;

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent, design or inventor's certificate or any PCT international application(s) listed below and have also identified below any foreign application(s) for patent, design or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed for the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN APPLICATION(S)

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 U.S.C. § 119	
Germany	197 19 955	14, May 1997	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below, and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Prior U.S.A. Application(s)

Application No.: _____ Filing Date: _____ Status: _____

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: Georg Sanger

Inventor's signature _____

Dated: _____

Residence (city and country): Lindenweg 6, 53545 Linz, Germany

Citizenship: German

Post Office Address: Same as above.

Send Correspondence To:

KNOBBE, MARTENS, OLSON & BEAR, LLP

Customer No. 20,995

H:\DOCS\MOH\MOH-2031.DOC

110899tw